INTEGRATING PUBLIC WATER SUPPLY PROTECTION INTO THE STATE OF MAINE'S VISION

The Report of the Resolve Chapter 140 Public Process
Submitted to the Joint Standing Committee on Natural Resources

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Executive Summary
Resolve, Regarding Source Water Protection Regulations Chapter 140

The safety and security of public drinking water supplies is strongly influenced by Maine laws, regulations and policies. In 2005, the Maine DHHS Drinking Water Program led an interagency review of these laws. This evaluation (Resolve 029), after review and approval by the Legislature, has been the subject of a public process in 2006. Citizens representing a variety of governmental, land use, water resource, and development interests met four times this fall. Their consensus was that the primary risk to public water systems lies in unmanaged development in areas contributing water to their wells and intakes. Public water systems have limited tools to use in managing land use, and water supply protection is not a consideration in many state and local decisions.

Development of formerly rural areas has increased risks to many water supplies. New residential and commercial development has displaced forestry, recreational, and agricultural land uses in water supply protection areas. Smaller systems, like nursing homes and mobile home parks, have very limited capacity to protect their water supplies, and are often not recognized as water suppliers in development decisions. Even the largest suppliers, with active protection programs, face challenges in maintaining water quality and availability.

We propose three recommendations to improve the protection of public water supplies. First, that all state agencies explicitly consider the impact of their actions and decisions on public water supplies. This provides leadership from the state, and a framework for building sustainable supplies. Secondly, the state should use this framework to encourage forestry, low intensity recreation and agricultural land use in water supply protection areas. Both national and local experience shows that these land uses consistently provide better water quality, and help to maintain adequate quantities of water for both human and aquatic uses. Finally, we recommend that the area immediately around public water supplies be declared a protected natural resource, and any new activities in the area be reviewed for impact at the state level. This will provide a base level of protection for smaller supplies, and give larger systems a new tool to help them work with their neighbors.

I. Introduction

Maine has about 2,000 public water systems (entities providing water to more than 25 people per day for more than 60 days a year) serving water to more than 800,000 of our citizens and visitors. Fifty-one community systems (systems that serve a year-round population) use surface water to serve towns and cities. They serve, in total, about 400,000 people. An additional 326 community systems utilize groundwater to serve 200,000 more people. These systems provide a vital resource: clean and safe drinking water.

Larger public water systems, when they have adequate technical and financial resources, often work with towns and landowners to provide protection for their supplies, through land ownership, easements, and ordinances. Even these systems struggle to maintain the quality of their supplies. Smaller community systems, like nursing homes, apartment complexes, and mobile home parks, do not have the resources to establish effective control over the areas that provide water for their systems. They also have few resources to deal with contamination of their supplies, putting the health of the population they serve at risk.

The Maine DHHS Drinking Water Program (DWP) has been working with public water systems to develop and implement protection plans for nearly 20 years. So far, only 20% of the 377 community systems have implemented protection plans that meet EPA standards. An effective protection plan includes land ownership, agreements, easements, and local and state regulations that work together to manage activities that may contaminate the water supply. Systems without protection are at much higher risk of contamination. Once contaminated, a system must either find a new source, or treat the water to remove the contaminant. The costs often are in the millions of dollars, and must be paid for by the state's taxpayers and water users.

The DWP conducted an assessment of the risks to public water systems under an EPA funded program from 1998-2003. The key findings of those assessments were that:

- ✓ Most systems currently have moderate levels of risk, primarily because their sources are located in historically relatively undeveloped areas.
- ✓ Only 1 in 5 community systems has adequate protection in place, so new development often includes land uses that increase the threat level for the supply.
- ✓ Managing and guiding growth in public water supply protection areas is essential to maintaining a safe and secure water supply.
- ✓ There are 218 community public water sources in fast growing towns and these systems face increasing threat levels without the tools to manage and reduce risks.

The 122nd Legislature adopted a resolve in 2005 directing the DWP, in cooperation with the Departments of Conservation, Environmental Protection and Agriculture, Food and Rural Resources, to evaluate the existing laws and regulations that provide protection for public water systems. The report from that evaluation *Integrating Public Water Supply Protection into the State of Maine's Vision* (Appendix A) identified significant gaps in state policy and law, and made three recommendations. It was accepted by the Legislature in 2006, with the directive that the DWP conduct a public process to flesh out the recommendations and report back in 2007. This report is the product of that process.

We invited representatives of a variety of interests to the meetings, and also provided information to the public through our newsletter and website. A list of invitees and attendees is in Appendix B. We held four meetings to discuss the three recommendations in the initial report. Records of the meetings are in Appendix C. The group reached consensus around versions of all three recommendations.

II. Summary of Existing Public Water Supply Protection

A. Resolve 029 findings on state policies and laws

Although there are many laws that provide protection to water quality and quantity, none are targeted at protecting public water supplies, and the overall effect is to create a situation where the state (DEP) is very good at cleaning up problems that threaten water supplies, but has very limited reach in limiting the risk to supplies. In many cases, the state steps in and cleans up the results of poor individual, local, or state decisions at significant cost. The DEP Oil Spill Cleanup Fund has born a significant share of these costs, as has the Uncontrolled Sites Fund. Examples discussed during the project include Rumford ($600,000 to remediate two leaking residential heating oil tanks to protect a municipal supply), Windham CITGO gasoline overfill ($2,000,000 in Portland Water District costs, abandonment of two highly productive wells, and more than $1,000,000 in investigation and clean-up costs), and Lisbon Maine Electronics solvent disposal ($2,680,000 so far in remediation and treatment costs to maintain the quality of the public water supply). More detail on these topics is included in the appendices.

B. Gaps in the protection strategy

Our most significant gap is the inability to manage development in public water supply protection areas to keep risks at an acceptable level. Neither state agency activities nor state and local decisions about private development consistently recognize the potential effect of development on public water supplies. Since most decisions about development are made without considering water supplies, it's not surprising that there are unintended consequences like the clean up costs cited above.

III. Recommendations for Improving Public Water Supply Protection

A. State Policy Refinement

All state agencies consider public water supply protection in their actions and decisions. We propose that the legislature adopt a policy that will ensure coordination among state agencies on this subject. The policy will be implemented primarily through memoranda of understanding between various agencies, as well as through the Land and Water Resources Council.

From the Resolve 029 report:

Recommendation 1: Establish consistent policies among all State agencies to enhance source protection in all state decision making, development, and practices.

A number of state agencies have authority over activities that can either enhance or detract from protection of public water supplies. In many cases, public water supply protection is not part of the framework for site selection and permitting decisions. The Maine DWP should provide leadership and coordination for decisions that may influence source protection. Agencies that can assist source protection include:

- Department of Conservation: shoreland and boat launch development, park water supply development, forest management assistance and enforcement prioritization in source water protection areas.
- Inland Fisheries and Wildlife: surface use management of water supply lakes, boat launch development and management, wildlife area management, hatchery management.
- Department of Environmental Protection: shoreland zoning review, Natural Resources Protection Act permitting, enforcement prioritization in source protection areas. Spill response and clean-up and siting of new UST's are good models of how source protection areas can be prioritized in environmental activities.
- Department of Agriculture: prioritization of enforcement, technical and financial assistance activities when correcting environmental problems to give greater priority to source protection areas.
- State Planning Office: assistance to local entities with source protection land use planning, comprehensive plan and ordinance review.
- Land for Maine's Future Board: assistance with protection of open space; protection of water supplies currently not a criterion for conservation.
- Maine Department of Transportation: road location and maintenance in source protection areas.

Proposed Implementing Language:
WHEREAS, the citizens of the State of Maine have invested significant resources in the development of public water supplies for towns and cities within the State, and
WHEREAS, a safe, abundant, and well-protected supply of drinking water is essential for the public health and economic vitality of the State, and
WHEREAS, water supply protection provides major economic and social benefits to the People of Maine by conserving open space and increasing the security of our resources, and
WHEREAS, the decisions of many state agencies can either foster or threaten public water supply protection, and
WHEREAS, water supply protection is not officially considered in many state decisions,
THEREFORE, we find and declare that all state agencies shall explicitly consider the impact of their decisions and actions on public water supplies, evaluate alternatives to minimize those impacts, and prescribe or conduct mitigation of unavoidable impacts on the water supply resulting from the activity.

B. Encouragement of Low Intensity Land Use in protection areas

Provide assistance and incentives to encourage low-impact recreational, forestry, and agricultural uses in public water supply protection areas. Some parts of protection areas can have multiple uses and still conserve water quality and quantity

From the Resolve 029 Report:

Recommendation 2: Create an effective program to maintain agricultural and forestry land uses in source protection areas.
National research shows that well-managed forestry and agricultural uses help maintain water quality and availability. Many source protection areas are currently being converted from forestry and agricultural uses to residential and commercial development. These more intensive land uses, also known as "sprawl" pose greater risks to water quality, and often reduce the availability of both ground and surface waters by altering the hydrology of the area.
2.1 Existing programs (e.g., Nutrient Management, Sustainable Forestry) that maintain environmentally responsible agricultural and forestry uses should be provided with resources and given a focus to work in source protection areas to encourage land conservation.

2.2 Provide resources and direction to Agricultural and Forestry programs including nutrient management, sustainable forestry, and right to farm to work with landowners in source protection areas to minimize the impact of their activities.

Although agricultural and forestry land uses represent the lowest level of threat to water quality, poor management can lead to a variety of problems, ranging from erosion and sedimentation to hydrocarbon and pesticide contamination of ground and surface waters. A combination of landowner education, conservation incentives, and, where needed, enforcement can significantly reduce these risks.

Implementation:
1. Utilize the Manure Management and other Agricultural programs and provide resources to farms in public water supply protection areas;

2. Focus agricultural and forestry land owner assistance in these areas:
3. Encourage land conservation in low-intensity recreational, forestry and agricultural uses in public water supply protection areas through Land for Maine's Future (LMF) and other programs. Amend LMF to allow purchase of land/easements where public water supply protection and other LMF goals are congruent;
4. Provide a dedicated bond-based fund to match a portion of the cost of land and easement acquisition to conserve lands in forestry, farmland, or low intensity recreation for water supply protection. The program to be administered by the DWP-Maine Municipal Bond Bank land acquisition loan program, with authorization expanded to allow working with land trusts as well as public water systems.

C. Specific program refinements

1. Statewide

DEP Site Location and NRPA review and enforcement will explicitly include public water supplies. The group supported having DEP and the Drinking Water Program develop and implement review standards for activities in public water supply protection areas.

From the Resolve 029 Report:

Recommendation 3: Mitigate the effects of existing and new development on drinking water quality through the use of education, incentives and enforcement.

Statewide activities:

3.1: Encourage active management (BMP's) of existing potentially threatening uses in source protection areas through municipal, PWS and state inspection of activities.
3.2 Develop a plan to target enforcement of existing environmental laws in source protection areas.
3.3 Add proximity to public water supplies as a review criterion for Environmental review programs, particularly NRPA and Site Location.

A number of public water supplies are located in relatively developed areas. It is not realistic to expect that businesses and residences will leave a source protection area. It is possible, through the use of education, incentives, and enforcement to mitigate the impact these activities have on water quality.
Maine has a strong array of environmental laws. We also have limited resources to enforce these laws. Programs like Pollution Prevention, Resource Conservation and Recovery Act and Underground Storage Tank inspection, Site Location, and Natural Resources Protection Act (NRPA) enforcement all can assist in reducing risks to public water supplies as well as helping maintain general environmental quality. Source protection areas should be identified on NRPA and Site Location applications, and minimizing the impact of development on water supplies should be an explicit review item under these laws. Focusing the energy in programs like these, as well as agricultural and forestry education and enforcement can reduce risks to public health.

Implementation:

1. Areas within 1,000 feet of public surface water intakes may be zoned resource protection based on proximity to the intake. (regulation change, Shoreland Zoning)
2. Community public water supplies are declared a protected natural resource under NRPA or a new parallel designation. This would include:
   - 2.1. The shoreland zone of 47 lakes and ponds. About ¾ of this area is under protective ownership or easement. The remaining area is generally zoned for development, and would generate applications requiring review.
   - 2.2. Sections of ten rivers and streams (1/2 mile upstream from the intake), currently in shoreland zoning.
   - 2.3. The primary protection area of 326 community ground water systems' supplies (either a 300 foot sanitary protection radius for ~360 wells or a primary model calculated area for 142 wells serving larger populations). We estimate that 80% of the area to be regulated is in water system ownership.
   - 2.4. Public Water Suppliers with adequate technical capacity will be able to request delegation of review, approval, and inspection authority.
   - 2.5. The Drinking Water Program will be a review agency for the public water supply, where necessary. DWP staff can provide technical review and field inspection of the regulated areas and activities.
   - 2.6. Residential activities would be conducted under Permit By Rule standards, and larger commercial/industrial activities would require activity-specific review and permitting.
   - 2.7. Standards for review are outlined in Appendix D.
   - 2.8. It is important to note that most (between 70 and 80%) of the land in these protection areas are owned or controlled by public water suppliers and thus will not generate applications. It is the edges of the areas that have the potential to generate applications and require review. These areas will present risks if not managed well.
3. Explicitly consider public water supply locations in Site Location and NRPA permitting and enforcement.
4. Consider future public water supply locations identified by Public Water Systems or the Maine Geological Survey in Site Location and NRPA permitting and enforcement.

2. Local Government Activities

The group did not reach consensus on requiring additional regulation on the part of local government. The group believes that utilizing statewide programs (including the NRPA regulation above), while still offering encouragement to localities, is a more effective strategy. The group agrees that local government should be a partner in development and implementation of source protection, but does not recommend that a

mandatory local zoning approach be implemented at this time. Thus, the recommendations below ***do not represent a consensus*** of the group, although they were supported by some group members.

From the Resolve:

Local Government activities:

3.4 Set minimum standards for local source protection ordinances.

3.5 Amend PL 761 to require that a PWS's written response to notification of proposed changes in land use activities in source protection areas be required prior to approval of a local permit. Make the adoption of ordinances meeting or exceeding state standards a municipal requirement, using an approach similar to shoreland zoning. Only 21% of all community public water supplies have effective land use controls on their source protection area. These systems serve a large portion of the PWS population (about 60%), but smaller systems have been unable to work successfully with local officials to develop and implement local protection plans. The DWP and its partners have been working with systems and towns for more than 15 years to encourage the adoption of local ordinances with outreach, small grants, technical assistance and model ordinances. Standards should be simple and risk-based.

For ground water sources, a small inner zone would have no new contaminant sources allowed and high levels of management at existing sources. A larger outer zone would require a review of risks associated with proposed development, and would encourage open-space conserving uses, like agriculture and forestry.

For surface water sources, the inner zone would be a part of shoreland zoning, and would include surface use restrictions near the intake, as well as resource protection zoning near the intake. For the watershed, a preference for sustainable agricultural and forestry uses and risk-based review standards for new development would be key components.

Although PWS's are nominally required to be notified of permit applications in source protection areas under PL 761, this provision has not been widely followed by local government. If a written response from the PWS was always a part of the record when the permit was processed, we could be sure that the PWS had been notified and had the opportunity to participate in the process. In many cases, the response might be that the PWS saw no threat in the change in land use. Even if the PWS intervened in the process, the decision would still lie with the local government.

Implementation

Require written acknowledgement from permit applicants that they are developing in a source protection area. Developers would make this informed consent statement a part of the record of local permits. A NRPA permit would be evidence of compliance.

List of Appendices:
A: Resolve 029 Report to the Legislature
B: List of those invited and attending Chapter 140 meetings
C: Notes of meetings.
D: Review Standards (NRPA) for public water supply protection areas